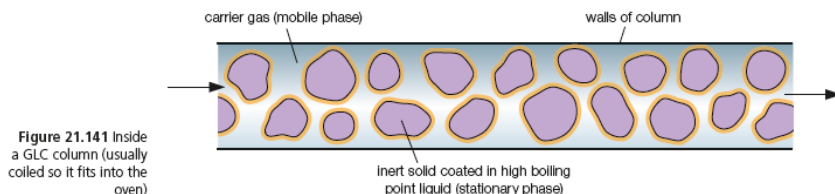


TAD08 – (A10 Notes) HL Further Chromatography Notes

Name

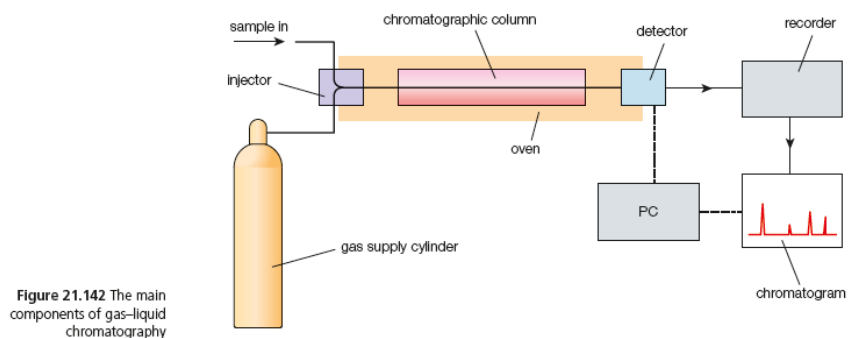
1. A.10.1 Describe the techniques of gas-liquid chromatography (GLC) and high performance liquid chromatography (HPLC).
 - a. *An outline of the operation for each technique will be assessed. This should include an understanding of R_t value and its dependence on other factors where relevant.*
 - b. GLC – Gas-Liquid Chromatography
 - i. Stationary Phase

ii. Mobile Phase



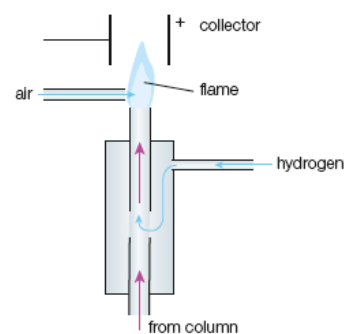
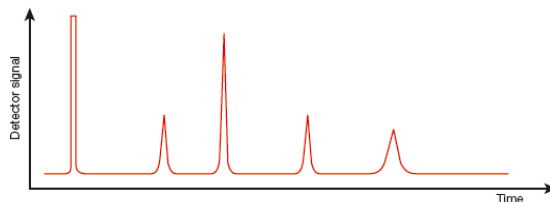
iii. Treatment of Sample

1. Injection
2. Vaporization
3. Separation – be sure to discuss the **retention time**



4. Detection

Figure 21.143 A GLC chromatogram: plot of peak of height against retention time

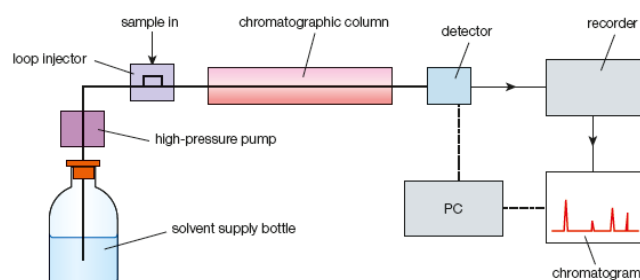


c. HPLC – High-performance Liquid Chromatography

i. Mobile Phase

ii. Stationary Phase

iii. Treatment of Sample



2. A.10.2 Deduce which chromatographic technique is most appropriate for separating the components in a particular mixture.

- a. **Aim 8:** HPLC can identify compounds that are temperature-sensitive. Uses include: analysis of oil; alcoholic beverages; antioxidants, sugars and vitamins in foods; pharmaceuticals; polymers; biochemical and biotechnology research; and quality control of insecticides and herbicides. GLC can identify compounds that can vaporize without decomposing. Uses include: analysis of urine samples from athletes for drugs, underground mine gases and blood alcohol levels.
- b. GLC Uses

c. HPLC Uses